

Holotype: Univ. Calif. Mus. Paleo. no. 14801, loc. A 3634.

Occurrence: loc. A 3634, west of Tiburon Island, Gulf of California, (depth 393 meters).

Remarks.—This species is readily distinguished from *V. guaymasensis* n. sp. and other Vitrinellas of the Pacific Coast by the small umbilicus with fairly straight columellar walls and by the relatively straight profile of the lip when viewed from above.

---

## SUPPLEMENTARY NOTES ON THE FOOD OF THE LIMPKIN

By CLARENCE COTTAM

Because our knowledge of the food of the Limpkin (*Aramus pictus pictus*) is so fragmentary and the distribution of this interesting bird is so restricted, it seems desirable to report a little additional information that has come to light. The range of the Limpkin appears to be so restricted and the bird itself so unadaptable that it could easily be exterminated. Presumably, too, the Limpkin subsists almost entirely upon one species of gastropod, *Pomacea paludosa* (Say).<sup>1</sup>

Our present knowledge of the food habits of the bird has been summarized by Bryant (1859), Cottam (1936), Harper (1936a, 1936b, 1941), and Howell (1932).

Bryant referred to the Limpkin's feeding on a species of *Natica* on Lake Dexter or on St. John's River in Florida, and this statement was quoted by Cottam. Harper (1941) has shown that the snail is probably the fresh-water gastropod, *Viviparus georgianus*; noting that this is a fresh-water area; Harper comments that *Natica*, being a marine mollusk, could not survive the fresh-water conditions occurring there.

Cottam reported upon the laboratory analysis of 30 birds col-

<sup>1</sup> Harper (NAUTILUS, vol. 55, p. 3) reported on "the apparent absence or at least scarcity of *Pomacea*" in Mill Creek, Camden County, Ga., the only regular habitat of the Limpkin in the state, as far as known at present. While his paper was going through the press, *Pomacea paludosa* was finally discovered in that creek by Messrs. R. A. McLean and G. A. Coventry, who collected a quantity of the mollusks and observed a number of egg-clusters. This find tends to emphasize the dependence of the Limpkin upon *Pomacea*.—Eds.

lected throughout the range of the species during a long period of years. He reported that *Pomacea depressa* (*paludosa*) constituted 70 per cent of the food, an undetermined gastropod—probably largely or entirely *Pomacea*—made up 26.66 per cent, *Campeloma* formed 3.33 per cent, and plant fiber made up 0.01 per cent. The percentage of *Campeloma* was based upon one stomach reported to contain 10 of these mollusks as the entire meal.

Identification of the gastropods eaten by the Limpkin is difficult because the bird takes none of the shell of any mollusk, regardless of its small size. Consequently, identification must be based upon the operculum (when it occurs) and upon the radula or molluscan teeth. The *Campeloma* identification made in 1923 has lately been found to be an error, despite the fact that the determination was made by a widely recognized and competent conchologist. Recent re-examination of the stomach containing 10 of these mollusks showed that the content comprised about 75 per cent of *Pomacea paludosa* and 25 per cent of *Viviparus*, either *V. georgianus* or *V. waltoni*. On the basis of the above-mentioned 30 stomachs, the percentages should have read: *Pomacea paludosa*, 72.50 per cent; *Viviparus* sp., 0.83 per cent; undetermined gastropod (probably largely *Pomacea*), 26.66 per cent; and plant fiber, 0.01 per cent.

An additional stomach recently analyzed in the laboratory of the U. S. Fish and Wildlife Service showed the following remains: many *Pomacea paludosa*, 54 per cent; comminuted filamentous algae (which appeared to have been ingested by the snails), 34 per cent; 126 seeds of *Scirpus californicus*, 6 per cent; 3 fly larvae (Muscidae), 2 per cent; 6 seeds of *Cladium jamaicense*, 2 per cent; 3 seeds of *Hydrocotyle* sp., 2 per cent; 1 beetle larva (Curculionidae), trace; 1 scale of a fish, trace; 1 seed of *Elcocharis* sp., trace; 1 seed of *Sparganium eurycarpum*, trace; 1 seed of *Verbena* sp., trace; 1 seed of Labiatae, trace; and undetermined vegetable fiber, trace.

These analyses indicate that some vegetable food (mostly seeds) and insect larvae are at times purposefully ingested. Though *Pomacea* constitutes the major and staple food item, other gastropods are consumed when the accustomed food is wanting.

Dr. Alexander Wetmore, Assistant Secretary of the Smithsonian Institution and in charge of the U. S. National Museum, has kindly submitted to the writer some of his unedited field notes describing the method whereby the Limpkin eats. These notes are so illuminating that they are quoted herewith:

"Paradise Key, Florida, February 21, 1919.—This morning I spent another hour in watching these birds. They fed on an open 'prairie' covered with a scanty growth of saw grass, an opening that a short time before had been covered with water and that was still boggy underfoot. The large fresh-water snail *Pomacea depressa* was common here and was embedded in the mud beneath an overlying mass of drying confervae. The limpkins walked about peering at the surface or probing likely appearing places with their bills. At intervals one would locate a snail and pull it out, immediately straightening up with the shell held in the tip of the beak. After gazing around the bird would bend down, seat the shell in the mud, poke at it for an instant and then raise the head for a second. A second period of probing ensued after which the head was raised with animal in the bill and the snail was swallowed.

"February 23, 1919.—This morning I walked out to investigate the area where the limpkins had been feeding. From their tracks still clearly shown in the mud I was able to figure out the manner in which this was done. The birds walked along occasionally probing a spot to a depth of three or four inches in search for shells. When one was found it was dragged out leaving a clean round hole sometimes 6 inches deep. The bird then seated the shell firmly in the mud with the aperture directly up. The sharply pointed mandibles were worked down on either side of the operculum and it was torn off and discarded, falling from one to twelve inches away. This was done as the head was raised. The snail was then extracted and eaten. All this was done neatly and in the majority of cases without marring the shell though in a few instances the margin was chipped slightly. These opened shells, opening up, with the operculum lying a few inches away, were scattered at intervals of 10 to 50 feet all over the prairie."

Laboratory analysis shows that many opercula are swallowed with the fleshy parts of the gastropods, although none of the hard, calcareous shell is ingested.

#### LITERATURE CITED

BRYANT, HENRY.

1859. [Birds of East Florida.] Proc. Boston Soc. Nat. Hist., vol. 7, pp. 5-21.

COTTAM, CLARENCE.

1936. Food of the Limpkin. *Wilson Bull.*, vol. 48, pp. 11-13.

HARPER, FRANCIS.

- 1936a. The distribution of the Limpkin and its staple food. *The Oriole*, vol. 1, pp. 21-23, 1 fig. 1 map.

- 1936b. The distribution of the Limpkin and its staple food, *Pomacca*. *THE NAUTILUS*, vol. 50, pp. 37-40, 1 fig., 1 map. (A revised reprint of the preceding paper.)

1941. Further notes on the food of the Limpkin. *THE NAUTILUS*, vol. 55, pp. 3-4.

HOWELL, ARTHUR H.

1932. Florida bird life. Florida Dept. Game, Fresh Water Fish and Bur. Biol. Surv., U. S. D. A., pp. 199-202.

WETMORE, ALEXANDER.

1941. Letter of November 3.

---

## NOTES ON THE NAME *LITIOPA MELANOSTOMA* RANG AND DISTRIBUTION OF THE SPECIES

By KATHERINE V. W. PALMER

The use of the name, "*Litiopa bombyx* or *bombix* Rang, 1829," in present American literature for *L. melanostoma* Rang, the small pelagic gastropod of the Atlantic and Pacific coasts, is erroneous, both for the species and author. Since the name is being used in the latest checklists and manuals<sup>1</sup> of the two coasts, it seems proper to call attention to the misnomer.

Rang never named a species of *Litiopa*, *bombyx* or *bombix*, particularly in 1829. In that year, he<sup>2</sup> described the genus *Litiopa*, differentiating two species as new *L. melanostoma* and *L. maculata*, in that order of description. *L. melanostoma* has priority in naming. Kiener,<sup>3</sup> in 1833, made further observations

<sup>1</sup> Dall, W. H., U. S. Nat. Mus., Bull. 112, 1921, p. 155; Dall, W. H., U. S. Nat. Mus. Proc., vol. 70, no. 2667, 1927, p. 118; Oldroyd, Ida, Shells West Coast N. Amer., vol. II, pt. III, 1927, p. 72; Johnson, C. W., Boston Soc. Nat. Hist., Proc. vol. 40, No. 1, 1934, p. 100; Smith, Maxwell, East Coast Marine Shells, 1937, p. 97.

<sup>2</sup> Rang, P. S., Ann. Sci. Nat., vol. 16, 1st ser., 1829, p. 307.

<sup>3</sup> Kiener, L., Ann. Sci. Nat., vol. 30, 1833, p. 221.